

DATA EVALUATION REVIEW 6

I. Study Type: Leaching/Adsorption/Desorption

II. Citation:

Sarafin, R., Hoe 064619 Adsorption/Desorption in the System Soil/Water. performed by Hoechst AG, Frankfurt am Main, Federal Republic of Germany, submitted by Hoechst Celanese Corporation, Somerville, NJ, USA. dated 2/10/89. Received EPA 12/12/89 under MRID # 410231-21.

III. Reviewer:

Typed Name: E. Brinson Conerly
Title: Chemist, Review Section 2
Organization: EFGWB/EFED/OPP

E.B. Conerly 5/10/90

IV. Conclusions: HOE 064619 was not mobile when tested with a silt loam soil.

V. Materials and Methods:

The adsorption/desorption of HOE 064619, a principal metabolite of HOE 039866, to allow assessment of its leaching potential.

test compound -- HOE 064619 labelled with ^{14}C in the 2-position, 97.5% radiopurity, 25.05 mCi/gm (55608 dpm/ug)

test soil -- silt loam, Hoechst Roussel Agri-Vet research farm, Leland, MS

test system -- 10 gm (dry weight equivalent) of soil in 25 ml solution.

Because preliminary experiments using CaCl_2 solution gave unexpectedly high K_d s, and K_d s showed dependence on Ca^{++} concentration [data not presented], the definitive experiment was done in double distilled H_2O . adsorption -- at $20 \pm 1^\circ \text{C}$ in the dark. After equilibration, the solutions were centrifuged, and the supernatant filtered. The resulting aqueous phase was analyzed by LSC for total radioactivity.

desorption -- the volume of solution removed in the adsorption phase was replaced with 25 ml fresh distilled water, and the mixture equilibrated. After centrifugation and filtration the aqueous phase was analyzed for total radioactivity. Desorption was performed three times.

VI. Study Author's Results and/or Conclusions:

RESULTS

The adsorption behavior of HOE 064619 is characterized by several peculiar features: dependence of K on the concentration of calcium ions, $K_{\text{des}} > K$, and high adsorption relative to HOE 039866 and HOE 061517. K_{ads} was 23.29 in double distilled water, and the K_{des} was 13.5.

VII. Reviewer's Comments:

- 1) The "unexpectedly high" K_d s using CaCl_2 solution may more nearly reflect behavior in the environment than the results from distilled water since

DER 6.1



Ca would routinely be found in soils. In any case, HOE 064619 does not appear to be highly mobile in silt loam.

VIII. CBI Information Addendum: attached

DER 6.2